Flight

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE AERO CLUB OF THE UNITED KINGDOM.

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AERO CLUB OF THE UNITED KINGDOM'S FLIGHT GROUNDS AT SHELLBEACH.—In the lower photograph is seen Muscle Manor, the old-world building which serves as the Members' Club House, and above is the hotel, within 100 yards of the railway station, which will be available for members and visitors to the grounds.

THE HUMAN SIDE OF FLYING.

BEING AN ATTEMPT TO INTRODUCE THE READER TO MESSRS. ORVILLE AND WILBUR WRIGHT AT PAU.

By H. MASSAC BUIST.

THE algebraic, the ingeniously theoretical, the Greek dictionary, and the wildly prophetical phases of flight each and all enjoy more than a due share of prominence in an age where the beginnings of practical achievement have aroused widespread public interest in the subject of riding the wind. To be frank, in this connection algebra, Greek and theory prove on investigation to constitute a medley of fine make-believe for facts; while mere prophecy and the making of random claims are other and more popular substitutes for facts. Yet, as one of the people, it is possible to be keenly interested in the subject of human flight without having the least respect for anything short of practical, full-scale achievement; and any degree of honest or of intelligent enthusiasm is bound to beget a healthy distaste for the time and energy-wasting processes of claiming and of prophesying. In this dilemma, how is one to approach the subject so as to come by something that shall be satisfying? That has been my problem; and the thought that it has been shared by others emboldens me to tell how I have begun to solve it.

The first step is to become convinced that there must be a human side to flying, despite the colourless, abstract, and appallingly erudite tomes that teem from the Press turn and turn about with fancy-free, hair-raising treatises on the precise manner in which we are going to wake up one morning to find the sky darkened with an enemy's aerial fleet, that seemingly never has to come to earth for petrol-tank or other guess replenishments.

These things being so, I resolved to go in quest of the present Mecca of the movement—Pau. Are you minded to go too? For me the excursion was rendered delightful every mile of the way, because I journeyed along the true pilgrim's course, the high road, albeit in rare luxury because on a 6-cyl. Rolls-Royce car, the route followed enabling us to halt many times on the way to visit other workers at the science of flight, as at Châlons, Issy-les-Moulineaux, Juvisy, Buc, and elsewhere, so that our interest grew and grew with the miles of roadway left behind, reaching the culminating point at Pont Long. But as no words can be as full of various fascinating meanings as is the open road, I shall not make the way tedious by telling our experiences in the order of their occurrence. Instead, we will start from Pau, for you will allow that it seems impossible to take a ply in the human phases of flight without being interested in the personalities of the brothers Orville and Wilbur Wright.

To follow the daily flights conveniently one needs a motor car, for the journey from Pau to Pont Long occupies an hour and a half by horse-drawn conveyance, and that is a tedious waste of time where minutes are precious. The town is quitted by the Bordeaux road. A series of large sign-boards, bearing each the legend "Champ d'Aviation," saves all trouble at the parting of the ways. By car one comes in twenty minutes' driving on some flat, open land on the left, with a large, solid-looking, reddish-brown building set back a couple of hundred yards or so from the roadway. This substantial and neatly-designed structure houses, perhaps, the most wonderful, as it is the simplest, machine yet devised by the mind of man—the four-year-old Wright biplane that the greatest men from all parts of the world have journeyed hundreds of miles to see, and that a king has been proud to sit on, though he might not make a flight.

We are rarely fortunate among visitors, who for the most part only go out to see flights about four o'clock in the afternoon, whereas we have set out at eight o'clock in the morning, with Miss Katherine Wright and the mail on board, and as the only other members of the party besides myself are Mr. Griffith Brewer, who represents Messrs. Wright's patent rights in this country, and

WHY WOULDN'T SHE START?—Wilbur Wright tries the starting bogie along the rail to see if the ball-bearing wheels run free. On this occasion it was eventually found that the pulley-wheel at the top of the derrick had seized and jambed the rope. The group includes Orville Wright (extreme right) and the three pupils on the left.

the Hon. C. S. Rolls, who, as a sometime friend, has been granted the honour of being the first Englishman who has been allowed to order a Wright aeroplane for use in Britain, we are *personæ gratæ* at the Wright establishment.

The shed is closed as we draw up to it, but as the car comes to a standstill a mechanic puts out his head, nods a friendly good morning, and goes to inform Messrs. Wright of our arrival. "Do you know who that is?" asks one of the party in reference to our self-appointed herald, and answers the question himself: "He is Mr. Lovelace, who had that ill-luck with the airship at the Exhibition in London last summer." Meantime the second mechanic has rolled back the huge sliding doors that furnish an opening of more than 40 ft. to enable the aeroplane to be taken in and out of its house. One's eyes kindle at a moment like this, on seeing for the first time the machine that folk have read about in all parts of the civilised world, and when on the tip-toe of expectation to catch a first glimpse of the brothers who will go down in history as the first of mankind to ride the wind at will.

One had just time to note with surprise that the four-year-old machine was spick and span, with aluminium paint over every part except the canvas, when a pale little man with a thin refined face, small regular features, very blue eyes, closely set and with somewhat of a poet's expression in them, a cap slightly too small for him, a stick, and a limp, came into view round one corner of the machine and, after a cheery "Good morning, sister," greeted the other members of the party with a quiet cordiality that gives genuine pleasure to a welcome. He need not have said "sister" for any stranger to have guessed the relationship; you could not mistake it. "How little he is" was the thought that came in mind to me when first I set eyes on Mr. J. M. Barrie, and that was also an initial impression concerning Mr. Orville Wright.

Before one had time to observe him more at the moment, however, a clean-shaven man, scarcely any taller, fair, tremendously active of movement, clad in an old cap, a black leather motor cyclist's type of coat, and trousers that were plainly strangers to the press, came forward in the characteristic act of rolling-up a ball of string and thrusting it into one of his pockets. He hailed "sister" also; but one would need to be told of the relationship, so utterly unlike his sister or his brother is Mr. Wilbur Wright. These three are the youngest members of a family of seven; among whom there is but one girl—the baby of them all—and who lost their mother a score of years ago. The "great little men" have been inseparable companions from the days when they could first toddle, and the greatest trial of their lives—their separation on account of their simultaneous demonstrations of human flight in France and America—is happily overpast, for they are working together again, consequently they are as happy as schoolboys. Perhaps this is why I find everything about them exactly the opposite from what I had been led to expect by multifarious written accounts. I have never seen them taciturn, or curt, or secretive, or any of the other things which I had been led to believe were their outstanding characteristics.

"Well, if I talked a lot I should be like the parrot, which is the bird that speaks most and flies least," Mr. Wilbur Wright once remarked to Mrs. Griffith Brewer; yet in the course of each day he talks as much as most men, only his words are to the point, even if they are jocular, and the sole point he has in mind is achieving more and more perfect flight. You have only to study the man to conclude that to his mind, as all the newspaper publicity and all the conversational tributes in the world will not help him to fly one whit the better, he has no use for either. Even as he turns from a camera whenever possible, so he grudges time spent apart from his proper work. Brevity is the characteristic of his utterances, as of those of his brother, by whom Mr. Wilbur is styled "Wil," for he, in turn, calls Mr. Orville "Orv." The pupils are the "Fledglings," Mr. Wilbur is "Teacher," the Comte de Lambert is "Jonah" (merely because he failed to start thrice in one particular direction), M. Paul Tissandier is "Little Tissandier," Captain L. Gérardville is the "Capt'n," and the main thing about him—albeit "we never mention it"—is that a fearful mystery surrounds his weight, which he firmly believes to be only 10 lbs. heavier than "Little Tissandier"; but "somehow the feel of the machine's more different than only that much," hence the genial officer in question has been dubbed "4839 Gerrard," among other nicknames. Every difficulty encountered, or trouble experienced with the machine, is an "ailment," for which "we must find a cure." When "Teacher" has made up his mind which "Fledgling" he will take with him, he cries out "Here, ——, you're elected," and the chosen one is expected to scramble promptly into his seat.

The brothers present a case of absolute contrasts working in such perfect harmony as to gain every advantage to be derived from two distinct types of intellect being brought to bear on a single proposition. Both are quite short, well-proportioned men of infinite patience. They smile readily, give you a very firm grasp when shaking hands, and express themselves with more than common clearness; but for the rest, you believe they are brothers merely because folk whose word you cannot doubt tell you so. Making due allowance for the fact that Mr. Orville is only beginning to recover from the effects of his accident, nevertheless one realises in many minor ways that he does not normally possess the lightning-like rapidity of movement characteristic of Mr. Wilbur, whose walk is a series of rapid strides, in which his legs seem to have an inclination to get slightly in advance of his body. The quick turns of the head, the sudden darting glances that he will cast at sky, horizon, machine or man, taking in all he wants in an instant, and the energy and decisiveness of his utterances are all in keeping. He is plainly a man accustomed to arrive at his decisions while things are yet happening. His deep-set eyes are well spaced, and he rarely opens the lids fully. When he does it is for a moment only, as to glance into the air, usually with a sideward swing of the head and a wrinkling of the brows, one gathering the impression that he possesses the power of actually viewing the wind, so penetrating is the gaze. His features are large, strong, well-cut, and in handsome proportion, the top of the head being quite bald and the face clean shaven, with thin straight lips, the corners of which sometimes play when his features break into a smile, on which occasions the eyes also laugh at you. When smiling, too, the mouth broadens and you become aware for the first time of a line that leads from either side of the cheek to about the corners of the mouth—those two lines which the eye of the camera seems to dwell on as the sole feature of the "flying-man," but which the human eye does not discover under any other circumstances. Truth to tell, the camera is no friend either to the brothers or to their sister. I have never seen a photograph or a representation on the bioscope that portrays any one of the trio truthfully.

(*To be continued.*)

NEWS OF THE WEEK.

The Aero Club's Flying Ground.

IN many ways, the selection, announced in last week's issue of FLIGHT, which has been made by the Aero Club of the United Kingdom after a most careful search for a flying ground, appears to be an admirable one. It is situated at Shellbeach, on the Isle of Sheppey, and although at first sight it would appear to be somewhat inaccessible, it is not really so, as the boat express trains to Queenborough serve within easy reach of the ground. It is possible to get an uninterrupted flight of ten miles, and there is a considerable expanse of country available for circling operations. On one side the ground is bordered by the sea, and at low tide there is a spacious stretch of hard sand which may be utilised.

With regard to club accommodation this is ample and good, for, besides an hotel quite close to the railway station, there is a charming old English house known as the Muscle Manor, which will be used as a club house, and where members will find excellent living and sleeping accommodation. Then, the old coast-guard station is being converted, and when the alterations are completed, will provide thirty additional bedrooms, while for those who wish to have a more or less permanent residence on the spot, a number of bungalows are shortly to be erected. Messrs. Short Bros., the Club's engineers, are already erecting workshops, and steps are being taken to erect immediately sheds for the housing of aeroplanes, &c., and members will also be able to erect their own sheds. Our frontispiece this week presents views of the club house and of the hotel, whilst a series of photos appear elsewhere in this issue of FLIGHT, showing interior views of the Club, a panorama of a corner of the ground, and other interesting views.

SHEPPEY ISLAND, FROM AN OLD PRINT.—The Aero Club's flight grounds and Club House are at the extreme top of the island comprising the land which is seen as a small island, but which is now all flat ground joined to the main island, the sea having receded, leaving the Club House, which at one time was at the edge of the sea, inland.

Airships at Olympia.

AMONG the exhibits which will be seen at Olympia when it opens on the 19th inst., will be two full-sized airships, one—the "America"—which has been built for the Wellman Polar Expedition, and the other, a dirigible balloon built by Mr. Willows, of Cardiff. The envelope of the former is about 200 ft. in length, with a diameter of 50 ft., and it has been designed to carry not merely passengers but also sledges and dogs. It is fitted with a powerful Lorraine-Dietrich engine and a specially large petrol tank. Every detail has been thought out with the greatest care, and great hopes are entertained that by its aid the conquest of the North Pole will be an accomplished fact during the summer.

A Blower Wanted.

IN connection with the exhibits of the above airships a difficulty has arisen with regard to the inflation of the envelopes. It is impossible, of course, to use gas, and it has therefore been decided to fill them with air. The Society of Motor Manufacturers and Traders therefore want to obtain the use of a rotary blower, giving a 7-in. flow of air, and a water pressure of 10 millimetres, and driven by an electric fan. It is estimated that this should fill the envelope of the Wellman airship, which contains 7,800 cubic metres, in from eight to ten hours.

Moore-Brabazon's Broken Shaft.

THE weather does not seem to affect Moore-Brabazon's enthusiasm for flying, for although the trial ground was under snow, he carried out several successful short flights on Sunday last, and would have continued with others but for the failure of a propeller-shaft. While the engine was running, the propeller-shaft broke off short and the propeller buried itself in the ground several yards away, happily without doing any damage. The propeller on the Voisin aeroplanes is, as our readers know, situated well behind the pilot, who is seated in front of the engine, but an accident of this description is by no means pleasant all the same; it certainly gives point to remarks on the subject which appeared in an article on propellers published in FLIGHT of January 9th.

The trials which preceded the mishap were remarkable more for the evidence of the control of the machine than for their extent, although the distances of from 3 to 4 kiloms. which were frequently accomplished are by no means insignificant. On the previous day, too, Saturday, February 27th, a flight of quite 5 kiloms. was successfully accomplished by Mr. Moore-Brabazon.

E.N.V. Engines in London.

THE E.N.V. 8-cylinder aeroplane engines are now represented in this country by the London and Parisian Motor Co., who control the interests of the Hotchkiss cars. One of these engines is, as our readers know, now

being very successfully used by Mr. Moore-Brabazon, and a description of its salient features appeared in FLIGHT of January 23rd last.

The Gordon-Bennett Flight Cup.

WITH three entries on its own behalf and three from this country, as announced in the official notices of the Aero Club in our issue of last week, the Aero Club of France has a solid foundation for its entry list in the Gordon-Bennett Flight Cup. Other countries will be represented by the Aero Club of America, the Italian Aeronautical Society, and the Aero Club of Austria, all of which have sent in their official forms.

Wilbur Wright and His Starting-Rail.

THAT accident which marred the commencement of a proposed flight which Wilbur Wright was about to undertake with a Colonel of the Spanish Army as his passenger on Monday of this week, is not the first which has resulted from a failure in the structure of the starting-rail as the aeroplane was on the point of ascending. Once before, it will be remembered, a piece of the rail flew up and damaged the rudder, but this time the damage was far more serious, for it even extended to the fabric of the main surfaces. As on every other occasion when there has been any *contretemps*, Wilbur Wright displayed the utmost calm, not to say unconcern, and effected a landing with the same security as if everything had been in perfect working order.

Orville Wright Ballooning.

THE balloon and the aeroplane can never be rivals, according to Orville Wright, who has just had his first experience of the former pastime. The mastery of the air in the second case, and the total subservience to it in the first, are apparently altogether too pronounced in the eyes of an expert like Orville Wright to ever allow him to confuse their respective spheres. Orville Wright's trip was made at the invitation of the Marquis de Kergariou, and Miss Katherine was included in the party. Subsequently the Marquis himself was Mr. Wilbur Wright's guest on board the aeroplane in flight.

The Pupils' Machine.

WHEN the second aeroplane is ready, Wright's pupils will proceed, if their master considers them sufficiently expert to do so, with trial flights on their own account. Their efforts will be all the more interesting in view of the difference of opinion which exists as to the extent of the art which is required to manipulate a Wright flyer, so that everyone will naturally watch their exploits closely, and compare them with the progress which is made by other experimenters with other machines.

Both the Count de Lambert and M. Tissandier are making rapid progress, and have on more than one occasion actually controlled the machine while Mr. Wright sat passive, but in readiness, in his accustomed place.

The "Silver Dart" Flies 4½ Miles.

SINCE the various flying machines of the American Aerial Experimental Association have been transferred from Hammondpont, N.Y., to Dr. Graham Bell's estate at Nova Scotia, the progress made, as we announced last week, has been very satisfactory, especially with the biplane "Silver Dart." On Wednesday of last week, the aeroplane, with Mr. Douglas McCurdy as aviator, made a flight of three-quarters of a mile in a straight line, and, in a second attempt, flew, at

The First Aviation Pilots, to whom the Aero Club of France have granted certificates of competency, and their "Credentials." The French orthography in the case of the Wrigths is quaint.

Front view of the American Aerial Experiment Association's "Silver Dart," which achieved some fine flights in Nova Scotia last week.

a speed of 40 miles an hour, for 4½ miles, up and down Baddeck Bay and over the frozen waters of the Bras d'Or Lakes. The aeroplane seemed to be under perfect control, and at one time Mr. McCurdy caused the machine to rise, so as to clear the tops of some trees on a neck of land. The flight was brought to a conclusion because Mr. McCurdy found himself too close to the earth to effect a safe turning, so he therefore shut off the power and glided down to the ice. We gave a description of this aeroplane in our issue of January 2nd last, and our readers may remember that a feature of the machine is the movable wing tips, which are triangular in shape. The main planes are arranged in the form of a distended ellipse.

Our Army Flyer.

A question in Parliament this week elicited from Mr. Haldane the information that of the £19,000 which has been spent by the War Office on experiments with aeroplanes and dirigibles, £700 has been paid to Mr. F. S. Cody, whose agreement has been extended to September 30th next.

Automobile Engineers and Flight.

As we announced some time ago, the Institution of Automobile Engineers have appointed a Committee to deal with aeronautical matters, and it has been decided that the work of the Committee shall consist of: (1) The collection and dissemination of data; (2) The consideration of questions of legislation and public rights; (3) The examination of papers on the question of aerial navigation; (4) The issue of medals and certificates for aeronautical science and aeronautical engineering; (5) To issue reports from time to time recording the progress of aerial navigation.

Monaco Extension of Date.

In view of the impending visit of President Fallières, the Monaco Flying Committee have decided to keep their competition open until April 23rd, and to receive entries up to the 15th of this month. Previously the closing date was to have been the 24th of this month, in which case the entry list would have closed on Monday last, March 1st. At that date seventeen names were included on the list, as follows:—

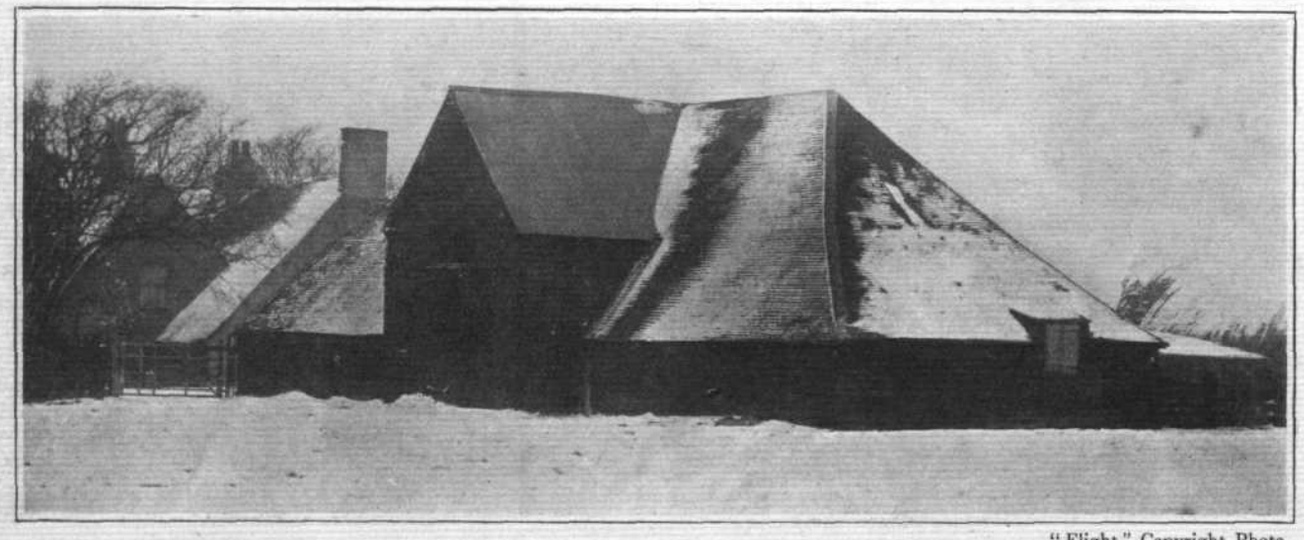
	Entrant.	Aeroplane.	Type.
1.	Delagrange ...	Voisin	Biplane
2.	Delagrange ...	Voisin	Biplane
3.	Lt. Bourgeat ...	Antoinette	Monoplane
4.	Soc. Antoinette...	Antoinette IV ...	Monoplane
5.	R. Demanest ...	Antoinette V ...	Monoplane
6.	L. Breguet ...	Breguet-Richet 2 bis	Helicopter-aeroplane
7.	L. Breguet ...	Breguet	Biplane
8.	De Caters ...	Voisin	Biplane
9.	Vuitton-Huber ...	Vuitton	Helicopter
10.	R. Ravaud ...	—	—
11.	A. Fletcher ...	Voisin	Biplane
12.	H. Fournier ...	Voisin	Biplane
13.	M. Rougier ...	Voisin	Biplane
14.	M. Koch ...	—	—
15.	M. Clemenceau...	Wright	Biplane
16.	M. Clemenceau...	Wright	Biplane
17.	Ostas Zewski ...	Austrian	—

A.C.F. Aerodrome.

On the proposal of the Marquis de Dion, the Committee of the Automobile Club of France have decided in principle to acquire an aerodrome whereon they can carry out open-air experiments in flight, and also, if occasion required, practical tests with agricultural motor machinery.

The First Batch of Wright Flyers.

The first batch of Wright flyers will consist of 14 machines, which will be delivered as follows: 3 will be at Pau, and on these Wilbur Wright's pupils will continue, 2 will go to Russia, 2 to Denmark, 1 to M. Fabry, of Calais, who intends to attempt the Channel flight, and another to M. Mathis, of Strassburg. The Société Française Mercedes will receive 1 machine, and MM. Houry and Hinstin, the latter one of the Directors of the Société Gregoire, will take delivery of 3 machines, while another will find its destination in Nantes.



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AERO CLUB FLIGHT GROUNDS AT SHELLBEACH.—Entrance to the Club House, and in the foreground the large barn where garage accommodation for thirty or more cars can be had.

"Flight" Copyright Photo.

AERO CLUB FLIGHT GROUNDS.—The reading room and the drawing room in the old-world Club House, Muscle Manor.

Welferinger on the "Antoinette V."

Another flight of about 2 kiloms. was accomplished by Welferinger on Demanest's "Antoinette," but in landing, damage was done to the machine on Thursday of last week, February 25th, and further flights were thus interrupted.

Goupy Uses an R.E.P. Engine.

A 35-H.P. 7-CYL. R.E.P. engine has been mounted on the Goupy aeroplane, which will be tested on the R.E.P. aerodrome at Buc.

Mangan Aeroplanes.

News from Marseilles adds another name to the list of would-be aviators in that town. Lieut. Mangan is having an aeroplane constructed which will be equipped with a 3-cyl. Anzani engine.

Wright Aeroplane for Germany.

It is reported that among the German purchasers of Wright machines is Mr. Mathis, who purposes giving demonstrations with it at Berlin, Frankfort, and Hamburg.

Wright Bros. to Visit the Pope.

A despatch from Rome says that the Pope, who has taken very keen interest in the development of flight, intends to invite the Wright Bros. to make some flights in the Vatican gardens during their forthcoming visit to Italy. Should the invitation be accepted, it is rumoured that Cardinal Merry del Val will be seen in the passenger's seat during one of the flights, and will so add flying to the other numerous sports with which he is actively acquainted.

An Aeroplane in Russia.

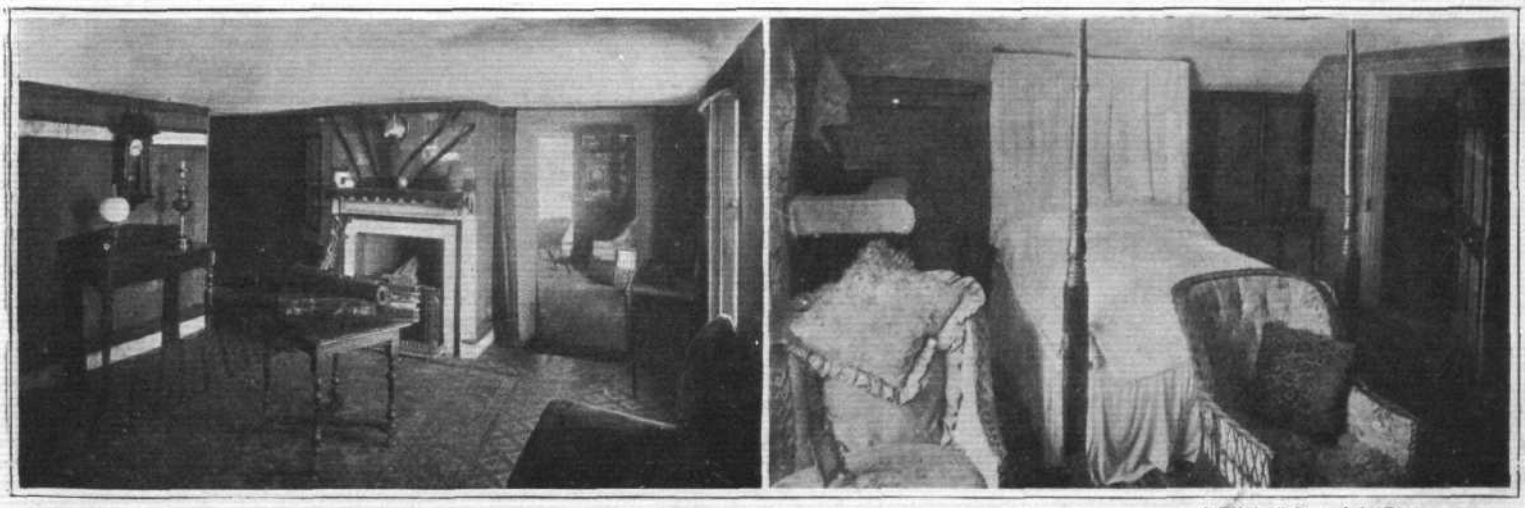
Towards the end of March an aeroplane, similar to that used by Delagrange, is expected to arrive in Odessa, where experiments will be made with it by M. Van der Chkrouft, the official pilot of the Aero Club of Odessa.

Cannes Aerodrome.

Preparations are being made to use the racecourse at Mandieu and the neighbouring grounds as an aerodrome; M. Michael Clemenceau, who is associated with the sale of Wright flyers, has long been speaking of conducting his experiments at Cannes, and as he has just entered two machines for Monaco he will in all probability start trials with them at an early date.

Frankfort Exhibition.

The passenger trips which are to be conducted with airships in connection with the Aero Exhibition at Frankfort which takes place in July, are attracting a great



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AERO CLUB FLIGHT GROUNDS.—The hall and one of the bedrooms in the old-world Muscle Manor Club House.

"Flight" Copyright Photo.

AERO CLUB FLIGHT GROUNDS AT SHELLBEACH.—A stretch on the sea line, showing the large expanse of hard sand available for flying on or over.

deal of attention, and it is stated that passages have already been booked. Four airships will be engaged in making these trips.

Frankfort-Schveningen Prize.

IN connection with the Exhibition at Frankfort, the city of Schveningen have offered a prize of 2,000 florins for the first aeronaut who shall fly from the grounds of the Exhibition to Schveningen.

Krupp's Aid Aeronautic Research.

AN annual grant of 10,000 marks (£500) has been sanctioned by the directors of Krupp's works for the benefit of the chair of aeronautic research which has recently been founded at Göttingen University.

Douai Municipal Prize.

THE Municipal Council of Douai has voted 20,000 francs towards the organisation of a flying competition in their district.

Flight Trials in Spain.

EXPERIMENTS are expected to be carried out near Valencia very shortly with a Spanish aeroplane designed by Messrs. Oliver and Delmas.

"Bayard-Clement" Airship Makes a Winter Trip.

THE dirigible "Bayard-Clement," which M. Clement has placed in charge of the Société Astra, made a trial trip with M. Henry Kapferer as pilot last Sunday. Two Spanish officers, Colonel Vitch and Capt. Kindelan, were taken as passengers, and the airship remained aloft for about an hour, during which time visits were paid to Saint Germain and Mesnil le Roi, a successful turning being effected above the latter place.

Airship Competitions.

THE Aero Club of France Airship Committee have decided in principle upon three types of competition as a means of encouraging this section of aeronautics. The first is for the longest voyage (in duration) in a closed circuit without descent or replenishment, the second is for the longest journey accomplished from one town to another under the same conditions, and the third is for the longest journey in a closed circuit accomplished by a dirigible of less than 1,500 cubic metres capacity. A minimum speed of 50 kiloms. per hour must be maintained.

Airship Refuges in Germany.

THE attitude which the military authorities take towards dirigibles in Germany has led them to very

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AERO CLUB FLIGHT GROUNDS.—A general view of one of the corners of the actual flight ground, showing the road which can be used by motor cars. On the right on the other side of the bank is the sea, giving at low water a vast expanse of hard sand for flying over.

seriously study the question as to the ways and means of housing these machines in different parts of the country in times of emergency. A report has been presented to the Minister of War detailing various schemes, and pointing out suitable sites for the erection of permanent sheds and other places where advantage can be taken of natural surroundings. It is probable that a sum of over 150,000 marks will be spent in realising some of the projects.

Count Zeppelin's Name.

COUNT ZEPPELIN has no son, and in order that his name may not lack a direct descendant to bear it, the King of Wurtemburg, who attended the recent marriage of Count Zeppelin's only daughter, offered the happy couple, as his wedding present, a royal decree, whereby the bridegroom, a young cavalry officer named Baron von Brandenstein, will henceforth be entitled to the suffix Zeppelin.

The Chambre Syndicale des Industries Aeronautique, at a recent Committee meeting, decided to remain neutral in its attitude towards this forthcoming Exhibition and that which will succeed it as the usual annual Salon of motor cars and allied machines. This latter, which is, as before, under the auspices of the Automobile Club of France, will be termed the "Salon de l'Automobile, de l'Aeronautique, du Cycle et des Sports," while the former, which is a flight show proper, is controlled by the Union des Industriels de la Locomotion Aerienne.

Model Show at Nice.

SIXTEEN entries have so far been received for the exhibition of models which takes place at Nice from March 1st to 15th. The names of the exhibitors who have entered are as follows:—Pilati, Louis, Meyson, Lidy, Meujon, Henry, Flectar, Zani, Brunet, Farout, Leverino, Vuitton-Huber, Vuitton, Blanc. "Petrel I," "Petrel II." Several of the entrants are local inventors,

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AERO CLUB FLIGHT GROUNDS AT SHELLBEACH.—The Coastguard Station, which is being converted for sleeping and other accommodation on the grounds.

Fashions for Flyers.

EVER keeping pace with the times, the editor of the *Tailor and Cutter* has, of course, not lost sight of the effect which the recent advances in flight may have upon the sartorial art, and so he recently organised a "sky wear competition." One of the entrants, with an eye for the useful as against the merely ornamental, sent in a design for a safety suit. At first glance this would appear to be an ordinary "Norfolk" costume, but when the flyer finds himself in the dangerous position of being suddenly precipitated to earth he undoes the jacket, rolls up his sweater, and, lo! there drops down a garment reminding one of the *parapluies* which were so fashionable among motorists a few years ago. The aeronaut then lets go of his airship or aeroplane, and the "skirt" of the garment spreading out like a parachute, he gradually floats to earth. These operations are said to occupy three seconds.

The Next Paris Flight Show.

ORGANISATION in connection with the first Paris International Salon exclusively devoted to aviation, which is to take place at the Grand Palais from September 25th to October 10th this year, is in full swing. M. R. Esnault-Pelterie is *Commissaire-General*, and a very popular official he is sure to make, with visitors from this country no less than those in his own land. and of the remainder the majority emanate from Paris and other parts of France.

The Eiffel Tower as a Weather-cock.

A NEW use has been discovered for the Eiffel Tower, which is quite important although by no means of an exalted nature. It is no less than that the flag on the top of the tower serves as an admirable weather-cock when read in conjunction with the structure itself, which has projections coinciding with the cardinal points of the compass, that facing north being painted red. Occupants of balloons and airships can, therefore, with the aid of field-glasses, readily inform themselves of the nature of the wind at an altitude of 300 metres above the ground in that vicinity, and make their arrangements with more certainty in regard to any contemplated aerial voyage.

"Law in the Air."

IN the current issue of the *National Review*, Major F. B. Baden-Powell contributes an article bearing the above title, in which he deals with the questions of Customs and International frontiers as affected by aeroplanes. He thinks it will be impossible to make the machines descend at certain fixed stations, and, therefore, Customs in the main will have to be abolished. Our readers will remember that we published a letter on the subject from Major Baden-Powell in our issue of February 13th.

AERO CLUB OF THE UNITED KINGDOM.

OFFICIAL NOTICES TO MEMBERS.

Annual General Meeting.

The Annual General Meeting of the members of the Aero Club of the United Kingdom will be held at 166, Piccadilly, London, W., on Thursday, March 11th, 1909, at 5 o'clock.

Committee.

The following members have been nominated for the nine vacancies on the Committee for 1909 and have signified their willingness to serve :—

*Brewer, Griffith, nominated by Viscount Royston and V. Ker-Seymer.
*Butler, Frank H., nominated by R. W. Wallace, K.C., and Martin Dale.
Crookshank, Major C. de W., nominated by Hon. C. S. Rolls and Griffith Brewer.
*Dunville, John, nominated by V. Ker-Seymer and Viscount Royston.
Gardner, Philip, nominated by Lionel de Rothschild and C. F. Pollock.
*Grubb, Capt. A. H. W., nominated by R. W. Wallace, K.C., and Viscount Royston.
*Huntington, Prof. A. K., nominated by Martin Dale and C. F. Pollock.
Lockyer, Dr. J. W. S., nominated by C. F. Pollock and Philip Gardner.
McClean, Frank, nominated by Capt. Hon. Claud Brabazon and Griffith Brewer.
Moreing, C. A., nominated by R. W. Wallace, K.C., and Prof. A. K. Huntington.
*Pollock, C. F., nominated by Martin Dale and Ernest C. Bucknall.
*Sampson, J. Lyons, nominated by Ernest C. Bucknall and C. F. Pollock.
*Spooner, Stanley, nominated by Prof. A. K. Huntington and R. W. Wallace, K.C.
Thomas, G. Holt, nominated by J. T. C. Moore-Brabazon and Viscount Royston.

The names of the retiring members of the Committee are indicated by an asterisk.

The attention of members is called to the instructions set out on the ballot paper which has been issued. Ballot papers must reach the Club not later than 12 noon on Wednesday, 10th inst.

Aero Club Flying-Ground at Shellbeach.

The arrangements are now well in hand in connection with the erection of the sheds at Shellbeach. It is hoped to have them ready for occupation by the end of March.

In order to facilitate the arrangements, the Committee will be pleased to hear, as soon as possible, from those members who are building or purchasing flying machines. Full dimensions and approximate date when the machines are to be ready for trials should be given.

Messrs. Short Bros., the aeronautical engineers to the Aero Club, are erecting two flying machines for members of the Club, and their aeroplane works on the flying-ground at Shellbeach have been started.

Gordon-Bennett Aviation Cup.

The Committee of the Aero Club have sent in a challenge for the Gordon-Bennett Aviation Cup, which will be competed for at Rheims on August 29th, 1909.

Several members have entered for the eliminating trials, which will be held before the Committee finally decide on the three competitors to represent this country. In view of the progress which is likely to take place during the next few months the Committee have decided to extend the date of entry to the 31st May, 1909.

Aero Exhibition at Olympia.

The Aero Exhibition at Olympia, held by the Society of Motor Manufacturers under the auspices of the Aero Club of the United Kingdom, will take place in March, opening on the 19th and terminating on the 27th. Members of the Aero Club will be admitted free on production of their Aero Club membership cards. A room will be placed at the disposal of the members during the Exhibition.

Model Flying Machines at Olympia.

A very interesting section of the Aero Exhibition at Olympia will be the models exhibited by the members of the Aero Club League and others. A prominent position in the centre of the main hall has been allotted for the models, and the Aero Club League is providing free of charge the necessary stands and attendants. A large number of models have been promised, including several from France, Belgium, and Spain.

New Members.

The following new members have been elected :—

G. F. Mort.	Mrs. C. M. Wilson.
J. Chester Mort.	Algernon Wyllie.

Lecture at the Royal United Service Institution.

A lecture on the "Defence of Harbours against Airships," by Col. F. G. Stone, R.A., will take place at the Royal United Service Institution, Whitehall, S.W., on Wednesday, March 10th, 1909, at 3 p.m. A few admission tickets have been kindly placed at the disposal of the Aero Club, and members wishing to attend should communicate with the Secretary.

Balloon Photographs.

A Bronze Medal will be awarded for the best set of photographs taken by a member from a balloon during the year 1908. Members are requested to forward the photographs to the Secretary by March 31st, 1909.

Gift of Pictures to the Aero Club.

Sir David Salomons, Bart., has kindly presented a number of historical pictures dealing with aviation to the Aero Club.

A souvenir of his recent flight with Mr. Wilbur Wright has also been received from Mr. Frank H. Butler.

HAROLD E. PERRIN,
Secretary.

The Aero Club of the United Kingdom,
166, Piccadilly, W.

NOTICE.—Complaints continue to reach us of the difficulty experienced in obtaining copies of FLIGHT regularly in certain districts. We would therefore point out the desirability of placing a definite order with the local agent to supply a copy EVERY *Saturday*.

CORRESPONDENCE.

*** *The name and address of the writer (not necessarily for publication)* MUST *in all cases accompany letters intended for insertion, or containing queries.*

Owing to pressure on our space, several letters have been held over.

OLYMPIA AERO EXHIBITION—A SUGGESTION.

To the Editor of FLIGHT.

SIR,—Being one of the three non-trading, or private, exhibitors of full-sized machines mentioned in your other journal, *Automotor*—my stand numbered 38 at the forthcoming International Exhibition—I shall be very pleased to include one of Mr. Sidney Hollands' 8-ft. propellers in my exhibit by affixing same to machine. I do not know Mr. Hollands personally, but his name is familiar enough to myself by his lectures at the Aeronautical Society meetings; and I know, furthermore, that his propeller is based on sound scientific principles, and, indeed, has advantages that will *prove* much to render the hélicoptère a practicable machine. I have forgotten Mr. Hollands' address.

May I suggest, additionally, that I shall be happy to assist any aeronautical motor engine firm, such as the Miesse, by including, *without charge*, one of their engines on my machine, as my own engine will not be completed to my liking in time. Personally, I think we all should help each true worker one amongst another in the young science. If the above will kindly write me c/o Secretary, Motor Manufacturers and Traders, Arundel Street, Strand, he will no doubt forward same.

Yours sincerely,
EDGAR WILSON.

MORE FLYING GROUNDS.

To the Editor of FLIGHT.

SIR,—As we are very much interested in aerial flight, if any of your readers or friends who have aero-flying machines would like to try them, we should be glad to let them have the use of one of our small islands or farms at New Burnham-on-Crouch and Canvey-on-Sea. They have a clear run on level pasture land from one to two miles, on which they may have trials free of charge.

We are, yours truly,
32, Charing Cross Road, S.W. HESTER AND HESTER.

A MODEL ENGINE DESIGN.

To the Editor of FLIGHT.

SIR,—*Re* the model engine as mentioned by Mr. Potter in FLIGHT, February 27th.

The design of this engine alone is conducive to excessive friction. In the first place, friction is practically independent of speed and the amount of surface in contact, being proportional to the pressure only. Now, assuming that the same sized cylinder is placed on a crank type of engine (which can be balanced, and vibration in reciprocating parts counteracted and practically absorbed as in modern high-speed engines, this being a great point for use in aeroplanes), the same pressure is applied at a point of greater leverage than is possible on an archimedean screw unless excessively large in diameter. Now, assuming that the point of leverage is four times greater in a crank than in the archimedean screw, this would mean that four times the pressure would be applied to the surface of the screw than would be applied to the surface of a crank-pin to obtain the same turning effort, and it is obvious that four times the friction results. This without considering the increase of friction by use of a wedge action (from which greater friction always results), friction from end-thrust on the driving-shaft, extreme difficulty of lubrication, and excessive vibration from the increase of reciprocating weight.

If steam or compressed air users concentrate themselves on the production of a light boiler or container, the engine can be left out of consideration, providing it is as light as can be made of its type and is efficient.

As a practical engineer, I should certainly charge more for the screw engine than for the ordinary type, owing to the difficulty of making archimedean screws without special plant.

Mr. Potter's engine is very ingenious, but I fear would prove far less efficient than an engine of ordinary type.

With apologies to Mr. Potter for my practical criticism,
I am, yours very truly,
MONTFORD KAY.

⊛ ⊛ ⊛ ⊛

PRESENT STATUS OF MILITARY AERONAUTICS.

By GEORGE O. SQUIER, Ph.D., Major, Signal Corps, U.S. Army.

(*Continued from page* 123.)

The "Republique" (Fig. 3.)

THIS is the latest of the French military dirigible balloons, and differs but slightly from its predecessor, the "Patrie." The volume has been increased by about 2,000 cub. ft. The length has been reduced to 200 ft., and the maximum diameter increased to 35½ ft. The shape of the gas-bag accounts for the 2,000 additional cubic feet of volume. The motor and propellers are as in the "Patrie." The total lifting capacity is 9,000 lbs., of which 2,700 lbs. are available for passengers, fuel, ballast, instruments, &c. Its best performance was an 125-mile flight made in 6½ hrs. against an unfavourable wind.

The material for the gas-bag of the new airship was furnished by the Continental Tyre Company. It is made up as follows:—

	Weight.
Outer yellow cotton layer ...	3·25 ozs. per sq. yd.
Layer of vulcanized rubber ...	3·25 ,, ,,
Layer of cotton cloth ...	3·25 ,, ,,
Inner layer of rubber ...	0·73 ,, ,,
Total weight	10·48 ,, ,,

It is interesting to note the changes which this type has undergone since the first one was built. The "Jaune," constructed in 1902–03, was pointed at the rear, and had no stability plane there; later it was rounded off at the rear, and a fixed horizontal plane attached. Finally a fixed vertical plane was added. The gas-bag has been increased in capacity from 80,670 cub. ft. to about 131,000 cub. ft. The manufacturers have been able to increase the strength of the material of which the gas-bag is made, without materially increasing the weight. The rudder has been altered somewhat in form. It was first pivoted on its front edge, but later on a vertical axis, somewhat to the rear of this edge. With the increase in size has come an increase in carrying capacity, and consequently a greater speed and more widely extended field of action.

"Ville de Paris" (Fig. 4).

This airship was constructed for M. Deutsch de la Meurthe, of Paris, who has done a great deal to encourage aerial navigation. The first "Ville de Paris" was built in 1902, on plans drawn by Tatin, a French aeronautical engineer. It was not a success. Its successor was built in 1906, on plans of Surcouf, an aeronautical engineer and balloon builder. The gas-bag was built at his works in Billancourt, the mechanical part at the Voisin shop, also in Billancourt. The plans are based on those of Colonel Renard's airship, the "France," built in 1884, and the "Ville de Paris" resembles the older airship in many particulars. In September, 1907, M. Deutsch offered the use of his airship to the French Government. The offer was accepted, but delivery was not to be made except in

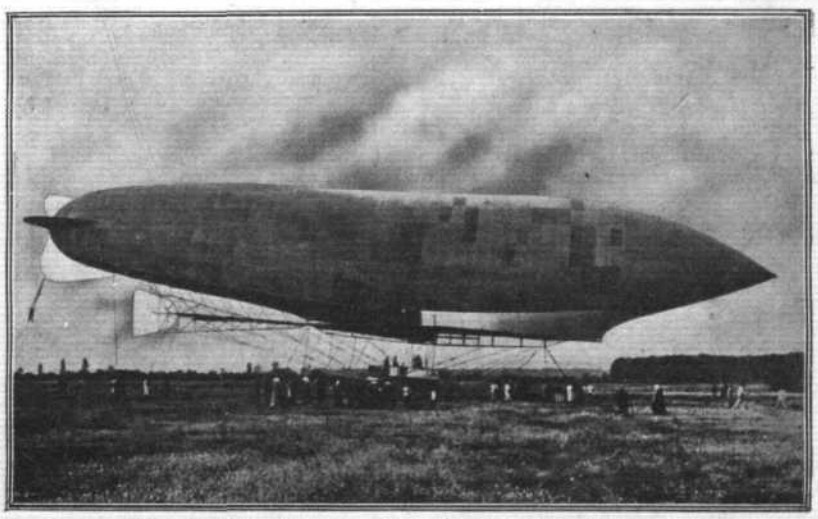

Fig. 3.—The French dirigible "La Republique."

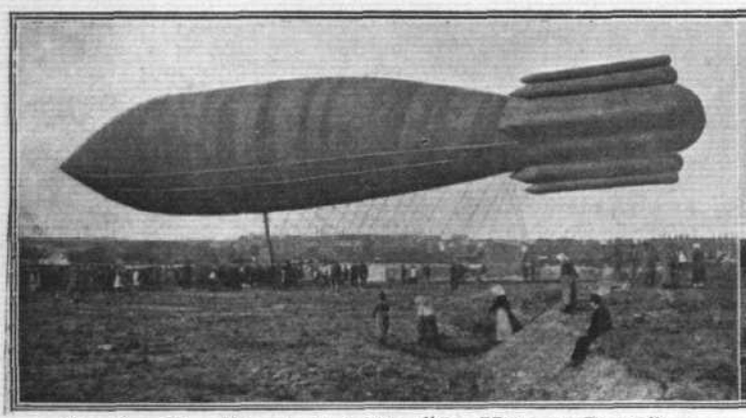

Fig. 4.—The French dirigible, "La Ville de Paris."

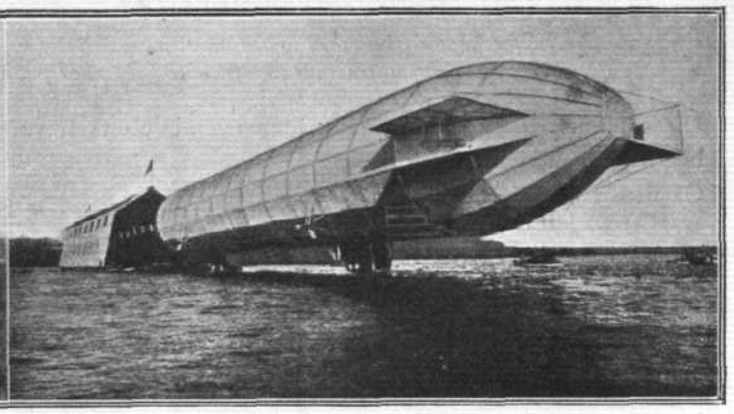

Fig. 5.—The German "Zeppelin," with its floating shed.

case of war or emergency. When the "Patrie" was lost in November, 1907, the military authorities immediately took over the Deutsch airship.

Gas-Bag.—The gas-bag is 200 ft. long for a maximum diameter of 34½ ft., giving a length of about 6 diameters, as in the "France" and the "Patrie." Volume 112,847 cub. ft. maximum diameter at about three-eighths of the distance from the front approximately, as in the "Patrie." The middle section is cylindrical, with conical sections in front and rear. At the extreme rear is a cylindrical section with eight smaller cylinders attached to it. The ballonette has a volume of 21,192 cub. ft., or about one-fifth of the whole volume, the same proportion found in the "Patrie." The ballonette is divided into three compartments from front to rear. The division walls are of permeable cloth, and are not fastened to the bottom, so that when the middle compartment fills with air, and the ballonette rises, the division walls are lifted up from the bottom of the gas-bag, and there is free communication between the three compartments. The gas-bag is made up of a series of strips perpendicular to a meridian line. These strips run around the bag, their ends meeting on the under meridian. This is known as the "brachistode" method of cutting out the material, and has the advantage of bringing the seams parallel to the line of greatest tension. They are therefore more likely to remain tight and not allow the escape of gas. The disadvantage lies in the fact that there is a loss of 33⅓ per cent. of material in cutting. The material was furnished by the Continental Tyre Company, and has approximately the same tensile strength and weight as that used in the "Patrie." It differs from the other in one important feature—it is diagonal thread; that is, the warp of the outer layer of cotton cloth makes an angle of 45 degrees with the warp of the inner layer of cotton cloth. The result is to localise a rip or tear in the material. A tear in the straight thread material will continue along the warp, or the weave, until it reaches a seam.

Valves.—There are five in all, made of steel, about 14 ins. in diameter; one on the top connected to the car by a cord, operated by hand only; two near the rear underneath. These are automatic but can be operated by hand from the car. Two ballonette valves directly under the middle are automatic and are also operated from the car by hand. The ballonette valves open automatically at a pressure of ⅜ in. of water, the gas valves open at a higher pressure.

Suspension.—This airship has the "long" suspension. That is, the weight is distributed along practically the entire length of the gas-bag. A doubled band of heavy canvas is sewn with six rows of stitches along the side of the gas-bag. Hemp ropes running into steel cables transmit most of the weight of the car to these two canvas bands and thus to the gas-bag. On both sides and below these first bands are two more. Lines run from these to points half way between the gas-bag and the car, then radiate from these points to different points of attachment on the car. This gives the triangular or non-deformable system of suspension, which is necessary in order to have the car and gas-bag rigidly attached to each other. With this "long" suspension, the "Ville de Paris" does not have the deformation so noticeable in the gas-bag of the "Patrie."

The Car.—This is in the form of a trestle. It is built of wood with aluminium joints and 0·12 in. wire tension members. It is 115 ft. long, nearly 7 ft. high at the middle, and a little over 5½ ft. wide at the middle. It weighs 660 lbs., and is considered unnecessarily large and heavy. The engine and engineer are well to the front, the aeronaut with steering wheels is about at the centre of gravity.

Motor.—The motor is a 70-h.p. to 75-h.p. "Argus," and is exceptionally heavy.

Propeller.—The propeller is placed at the front end of the car. It thus has the advantage of working in undisturbed air; the disadvantage is the long transmission and difficulty in attaching the propeller rigidly. It has two blades and is 19·68 ft. long with a pitch of 26·24 ft. The blades are of cedar with a steel arm. The propeller makes a maximum of 250 turns per minute when the engine is making 900 revs. Its great diameter and width compensate for its small speed.

Stability.—This is maintained entirely by the cylinders at the rear. Counting the larger one, to which the smaller ones are attached, there are five, arranged side by side, corresponding to the horizontal planes of the "Patrie," and five vertical ones corresponding to the "Patrie's" vertical planes. The volume of the small cylinders is so calculated that the gas in them is just sufficient to lift their weight, so they neither increase nor decrease the ascensional force of the whole. The horizontal projection of these cylinders is 1,076 sq. ft. The centre of this projection is 72 ft. from the centre of gravity of the gas. The great objection to this method of obtaining stability is the air resistance due to these cylinders, and consequent loss of speed. The stability of the "Ville de Paris" in a vertical plane is said to be superior to that of the "Patrie," due to the fact that the stability planes of the latter do not always remain rigid. The independent velocity of the "Ville de Paris" probably never exceeded 25 miles an hour.

The Rudder.—The rudder has a double surface of 150 sq. ft,, placed at the rear end of the car, 72 ft. from the centre of gravity. It is not balanced, but is inclined slightly to the rear so that its weight would make it point directly to the rear if the steering-gear should break. Two pairs of movable horizontal planes, one at the rear of the car having 43 sq. ft., and one at the centre of gravity (as on the "Patrie") having 86 sq. ft., serve to drive the airship up or down without losing gas or ballast.

Guide Ropes.—A 400 ft. guide rope is attached at front end of car. A 230 ft. guide rope is attached to car at the centre of gravity.

About thirty men are required to manœuvre the "Ville de Paris" on the ground. The pilot has three steering wheels, one for the rudder and two for the movable horizontal planes. The instruments used are an aneroid barometer, a registering barometer giving heights up to 1,600 ft., and an ordinary dynamometer which can be connected either with the gas-bag or ballonette by turning a valve. A double column of water is also connected to the tube to act as a check on the dynamometer. Due to the vibration of the car caused by the motor, these instruments are suspended by rubber attachments. Even with this arrangement, it is necessary to steady the aneroid barometer with the hand in order to read it. The vibration prevents the use of the statoscope.

(To be continued.)

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